

E1  
Contd  
10 kg/m<sup>3</sup>;

wherein said thermal-acoustic insulation material is non-galvanic corrosive.

E2  
3. (Three Times Amended) A thermal-acoustic insulation material as in claim 1, wherein said anisotropic pitched-based carbon fibers have an average fiber diameter of from 0.5  $\mu\text{m}$  to 1.0  $\mu\text{m}$ .

10. (Four Times Amended) A method of manufacturing a thermal-acoustic insulation material, comprising the steps of:

E3  
producing spun fibers having an average fiber diameter less than 2  $\mu\text{m}$  and an average fiber length of 1 mm to 15 mm by heating and melting anisotropic pitch obtained by polymerizing condensed polycyclic hydrocarbon, then discharging a melted matter out of a spinning nozzle and at the same time, blowing a heated gas from around the spinning nozzle in the same direction to which the melted matter is discharged;

manufacturing non-galvanic corrosive carbon fibers by infusibilizing spun fibers and thereafter carbonizing said carbon fibers at not lower than 550°C. but lower than 800°C.;

forming a carbon fiber aggregate by aggregating and compressing said non-galvanic corrosive carbon fibers to a bulk density of from (3 - b) kg/m<sup>3</sup> to (10 - b) kg/m<sup>3</sup>;

spraying a thermosetting resin solution to said carbon fibers so that the amount of a thermosetting resin in relation to the amount of the carbon fiber aggregate is made to be b, where b

is an arbitrary number fixed so that the bulk density is positive and the relationship  $0.3 \leq b \leq 4$  is satisfied; and

curing the thermosetting resin by heating the carbon fiber aggregate sprayed with the thermosetting resin solution to manufacture a three dimensional structure of carbon fibers wherein said carbon fibers are bonded at contact points thereof, said three-dimensional structure having a bulk density of from  $3 \text{ kg/m}^3$  to  $10 \text{ kg/m}^3$ .

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11. (Amended) A method of manufacturing thermal-acoustic insulation material, comprising the steps of:

producing spun fibers having an average fiber diameter less than  $2 \mu\text{m}$  and an average fiber length of 1 mm to 15 mm by heating and melting anisotropic pitch obtained by polymerizing condensed polycyclic hydrocarbon, then discharging a melted matter out of a spinning nozzle and at the same time, blowing a heated gas from around the spinning nozzle in the same direction in which the melted matter is discharged;

manufacturing non-galvanic corrosive carbon fibers by infusibilizing said spun fibers and thereafter carbonizing said spun fibers at not lower than  $550^\circ\text{C}$ . but lower than  $800^\circ\text{C}$ .;

forming a carbon fiber aggregate having a bulk density less than  $1.3 \text{ kg/m}^3$  by aggregating said non-galvanic corrosive carbon fibers;

spraying a thermosetting resin solution to the carbon fiber aggregate; and

curing the thermosetting resin by compressing and heating the carbon fiber aggregate sprayed

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with the thermosetting resin solution to bond contact points of said carbon fibers and thereby manufacture a three dimensional structure of carbon fibers having a bulk density of from 3 kg/m<sup>3</sup> to 10 kg/m<sup>3</sup>.

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Es

<sup>2</sup>  
42. (Amended) A method of manufacturing a thermal-acoustic insulation material as in claim <sup>1</sup>1, wherein in said step of forming a carbon fiber aggregate, said non-galvanic corrosive carbon fibers are opened by the air and dropped from a height of at least 100 cm or higher onto a plane.

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Es

42. (Amended) A method of manufacturing a thermal-acoustic insulation material as in claim 10, a temperature of carbonizing the spun fibers is not lower than 650°C. but lower than 750°C.

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Es

<sup>3</sup>  
43. (Twice Amended) A method of manufacturing a thermal-acoustic insulation material as in claim <sup>1</sup>1, wherein a temperature of carbonizing the spun fibers is not lower than 650°C. but lower than 750°C.

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